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UNITED STATES DEPARTMENT OF AGRICULTURE
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Mr. McCrory, Mr. Boyd, Mr. McLaughlin, Mr. Gray and Mr. Ashby attended the annual meeting of the A.S.A.E. held at Estes Park, Colo. June 22 to 25. E. M. Mervine is Chairman of the local committee on arrangements. The following papers prepared by members of this Bureau were presented at the meeting:

"Current Agricultural Engineering Activities and Opportunities in Cooperative Extension Work" by S.P. Lyle.

"The Operation of Row-Crop Equipment over Terraced Fields and Hillside with Special Reference to Corn Machinery"

By C. K. Shedd.

"New Developments in Sugar Beet Machinery" by E. M. Mervine and S. W. McBirney.

"Progress Report of Wheat Storage Project" by Wallace Ashby.

"Drainage Activities" by L.A. Jones.

"Benefits and Accomplishments of Drainage" by J.G. Sutton.

"Improving Drain Tile Resistance to Alkali Conditions"
by Dalton G. Miller.

"New Developments in Fertilizer Placement Research" by
G. A. Cumings.

"Engineering Phases of Pink Bollworm Control" by D.A. Isler.

Mr. Boyd has recently visited work in which the Bureau is interested in the Lower Rio Grande Valley, Laredo, and Uvalde, Texas, in company with Harry G. Nickle; El Paso, Santa Fe, and Albuquerque with H. F. Blaney; Phoenix and Yuma, Ariz. with Karl Harris; Yuma Valley, Yuma Mesa, Bard Experiment Station, the All-American Canal Imperial Valley, San Diego and Pomona, Calif., with D. W. Bloodgood; and other points in California and Oregon in company with A. T. Mitchelson.

Chas. A. Bennett attended the annual meeting of the Alabama Ginners' Association at Birmingham, Ala., on June 19, 1936, at which time he presented a paper entitled "Progress in Ginning Tests and Instruments".

The machine shop of the Cotton Ginning Laboratory has just completed a test model of a 16-saw, 6-inch gin for laboratory use on small lots of cotton. Test runs have given beautiful samples, and it is believed that this unit will serve for the purpose of exhibition displays to illustrate improved ginning.

The U. S. Cotton Ginning Laboratory has just received from the Minister of Agriculture, Republic of Argentine, the Spanish translation of Farmers' Bulletin No. 1748 "Ginning Cotton".

The U.S. Cotton Ginning Laboratory prepared a very colorful exhibit for the Texas Centennial Exposition being held at Dallas. This exhibit comprised a miniature 4-stand cotton gin, complete with steel building, and side displays of ginned lint samples illustrating how the handling practices of both the farmer and the ginner affect the final quality of the cotton. The Division of Mechanical Equipment exhibits included a model of the variable depth cotton planter together with illustrations emphasizing the importance of shallow cultivation and proper seedbed preparation on yield of cotton on Greenville sandy loam soil. The importance of fertilizer placement with reference to the seed was also shown in photographs and other illustrative material.

In connection with the Rio Grande Joint Investigation for the National Resources Committee, W. W. McLaughlin and Harry F. Blaney attended a conference at Santa Fe, New Mexico, May 1 and 2, at which representatives of the National Resources Committee, Bureau of Reclamation, Geological Survey, Soil Conservation Service, Resettlement Administration, and the States of Colorado, New Mexico, and Texas were present. Under the supervision of Harry F. Blaney, experimental stations were established in the lower, middle, and upper valley for determining evaporation, transpiration, and use of water by various types of vegetation. Soil sampling was started for the purpose of determining consumptive use of water on alfalfa, deciduous trees, and vineyards. Compilation of data on use of water, on file in the Bureau of Reclamation office at El Paso, was begun. An attempt is being made to analyze all records available on flow of the Rio Grande at Leasburg Dam and El Paso, also rainfall, canal diversions, crop surveys, and other data pertaining to Mesilla Valley for the past 20 years, with the view of determining consumptive use of water. Similar data are being collected for the 1936 season in cooperation with the Bureau of Reclamation.

Under the direction of Paul A. Ewing, the mapping of the vegetative cover in accordance with the classifications decided upon at the conferences in Santa Fe, was begun by a party of junior engineers. By the end of the month the party had completed the mapping from Fort Quitman to a line approximating the Texas-New Mexico boundary, and in addition a portion of the area surrounding Elephant-Butte reservoir. Tentative arrangements were made with representatives of the Resettlement Administration, by which the mapping of the agricultural areas along small tributaries of the river below San Marcial would be undertaken by that agency.

Fred C. Scobey made an extensive study of the total map requirements in connection with the Rio Grande study, in depicting the irrigated lands of the Basin, comprising nearly 11,000 square miles. In addition to the maps for our own bureau work, Mr. Scobey developed the lines for a general map of the whole area from the headwaters of the Rio Grande to below Ft. Quitman. Such a map, when "squared up" extends to the west far enough to show all the transmountain diversion possibilities and will show the location of all the irrigated and potential areas finally developed.

L. T. Jessup attended the hearing held May 14-16 before the International Joint Commission at Nelson, B.C., relative to a certain application for works on the Kootenai River. On May 20 he attended the regional meeting of the Water Resources Committee, where the subject of International streams was discussed. Several Canadian engineers and officials were present and the matter of storage on Kootenay Lake was discussed.

Wells A. Hutchins returned to Berkeley from Washington, D.C. during the latter part of May, after completing the manuscripts for two bulletins on mutual irrigation companies for the Cooperative Division of the Farm Credit Administration. One is a technical bulletin covering the study of these companies in California and Utah, with emphasis on their credit phases and costs of operation; the other is a shorter, more popular discussion of the organization and functions of mutual companies.

A newly developed method of irrigation from perforated, portable, slip-joint pipe is to be tried out at the Umatilla Field Station, Ore., according to M. R. Lewis. One advantage of this method would be the saving of water on very porous soils by reason of the possibility of applying very light irrigations. Another advantage would be the possible decrease in the damage done by curly top, a disease of many vegetable crops. The study is planned in cooperation with H. K. Dean, Superintendent of the Umatilla Field Station, and B. F. Dana of the Division of Fruit and Vegetable Crops and Diseases of the Bureau of Plant Industry.

Enroute to the A.S.A.E. meeting R. B. Gray inspected the corn machinery project work at Ames, Iowa, after which he conferred with officials at Lincoln, Nebraska, on cooperative work. After the meeting at Estes Park, Mr. Gray will go to Davis, Calif., where sugar beet machinery will be discussed with Prof. Walker. The return trip will be made by way of Presidio, Texas, where inspection of the pink boll worm work will be made; Auburn, Alabama, in connection with cotton production machinery work; and Memphis, Tennessee, to investigate mechanical cotton pickers.

G. A. Cumings left Washington June 18 to inspect several of the cooperative fertilizer placement experiments in the mid-western and northern states.

Field operations on the fertilizer machinery project for 1936 are about completed after considerable delay due to drought. The transplanting of celery, a new crop with the project, in the latter part of June will terminate the field work for 1936.

According to J. W. Randolph the plow test unit under construction at the farm tillage machinery laboratory at Auburn, Ala. was completed June 11. This unit is designed to measure the forces required to hold a plow bottom in its working position by measuring the three components of draft at the hitch point, the horizontal force at a point near the shin of the plow and the vertical forces directly over the bottom. Preliminary tests show that this unit works very satisfactory. A series of tests will soon be gotten under way to determine how the factors of speed, depth, soil, etc. affect the forces set up in a plow bottom. A similar apparatus for testing disk units is under construction by E. D. Gordon.

One hundred and ninety cubic yards of Lufkin clay was shipped from Catherine, Ala., and placed in a half plot at the farm tillage machinery laboratory. This soil contains the highest percentage of colloid of the soils to be used in the Auburn tillage studies. To illustrate the difficult nature of the soil, it was locally reported that a 15-30 tractor can only pull in low gear two 10-inch bottoms at 5-inch depth.

The influence of the character of soil tillage at the Prattville field shows an accumulative effect to the fifth year. On June 10 it was noted that where excessive tillage was employed the plants were 2 1/2 inches high, while with simple tillage, permitting an open granular soil the plants were 10 to 12 inches in height and fruiting had started.

The P.W.A. landscaping, fencing, and paving project has made the farm tillage machinery laboratory one of the beauty spots of Auburn. Through the use of three new varieties of grasses for this area, the lawn excels that made from using native material.

The 160 ft. by 160 ft. screen wire cage to be used in connection with pink bollworm cultural control experiments at Presidio, Texas, was completed in May. The factor of moth migration from untreated areas will be excluded in tests conducted under the cage.

R. M. Merrill reports that the field experiments in Ohio with the use of vapor spraying equipment for applying insecticides and fungicides to apples, cherries, and raspberries are being continued through the spraying season.

A. H. Graves of the Toledo office spent the week of June 1 at State College, Pennsylvania, where he cooperated with A. W. Clyde in testing plow attachments, using the tillage meter developed by Mr. Clyde. A preliminary study of the data secured indicates that the use of the self-aligning disc jointer reduces the total draft of a plow approximately 12 percent from that required when the conventional colter and jointer are used. These results check closely with previous tests.

There seems to be a need for a meter capable of measuring spray liquids under high pressures. E. M. Dieffenbach has recently submitted a schematic diagram of a meter intended for this use.

W. M. Hurst and Geo. Stafford left Washington on June 15 for Lancaster, Pa. where tests were conducted in mechanical harvesting of Pyrethrum. Two machines were used one an altered cotton stripper and the other constructed at Arlington Farm especially for Pyrethrum. Both machines worked well in fields where the crop was upright, but in fields where the plants were lodged the need for a mechanical pick-up attachment was evident. Additional tests will be made near Reedsville, W. Va.

Wallace Ashby is on a trip through portions of the wheat belt in connection with the grain storage project.

Bulletins issued:

The Vertical Drier for Seed Cotton. By Chas. A. Bennett and F. L. Gerdes. (Miscellaneous Publication 239)

Dust Fungicide Feeders for use with Seed-Treating Equipment, (Mimeographed)

A Telescoping Wagon Tongue. (Mimeographed)